

Overview of osteopathic manipulative medicine

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Liddel A . Overview of osteopathic manipulative medicine. *Curr. Res.: Integr. Med.*. 2022;7(6):19-21.

ABSTRACT

A relatively new field of medicine called osteopathic manipulative medicine (OMM) is gaining popularity and research support. Physical adjustments are made to various body regions as part of osteopathic manipulative therapies (OMT) in order to enhance systemic homeostasis and patient wellness. Many new Doctor of Osteopathy (D.O.) students are actually learning the osteopathic concepts of a mind-body-spirit-based treatment at osteopathic institutions across the country that are teaching this new area of the holistic patient-based approach.

Many people, both inside and outside of the medical field, are still unaware of (or misinformed about) the therapeutic applications and potential benefits of OMT mechanisms, despite their shown therapeutic efficacy: 1)

Assistance with neurogenesis and CNS cell development, (2) Controlling cerebral blood flow in the affected area, (3) Preventing apoptosis, (4) Controlling neurochemicals, and (5) Improving memory and long-term potentiation (LTP) after a stroke. Here, we provide a brief summary of this osteopathic procedure that focuses on the hands-on techniques that are regularly implemented in the clinical setting. Different OMTs can be employed to improve patient recovery, either on their own or in combination with the targeted therapies used in allopathic regimens, it is becoming increasingly clear. The benefits of adopting OMT as a therapeutic modality should therefore be made known to the broader medical community, as well as to the general public and those involved in the healthcare industry.

Key Words: *Osteopathy; Muscle energy; Myofascial release; Balanced ligamentous tension*

INTRODUCTION

According to broad consensus, osteopathy is a complementary kind of medicine that emphasises the body's natural abilities to repair itself and adjust in order to reach homeostasis [1]. Osteopathic therapy works to speed up the healing process by manipulating the body's tissues and bones. The expanding number of osteopathic medical schools around the nation is evidenced by the reduced cost of osteopathic medicine, its noninvasive techniques, and its demonstrated effectiveness in fostering whole-body recovery. The United States now has 37 approved institutions of osteopathic medicine. A projected 7445 students studying osteopathic medicine graduated in 2021, while 8945 first-year students are anticipated to matriculate in the academic year 2021-2022. A college of osteopathic medicine is attended by one out of every four medical students [2]. They will join the record-breaking 121,000+ other D.O.s in the US once they graduate. In fact, osteopathic medical students now account for more than 25% of all medical students in the United States for the first time in history. Unfortunately, for those interested in a future in osteopathic medicine, it has become increasingly clear that there is a need for this area of medical research to be addressed, respected, and widely shared due to the lack of awareness in both the general medical community and the informed public.

When a doctor of osteopathic medicine is introduced, the general public frequently asks, "What's that?" This article emphasises the motto of osteopathic medicine, which is the compassionate care provided by the Doctor of Osteopathy, in addition to other osteopathic therapies (D.O.). Osteopaths used to work in their own clinics and hospitals, and while they still do so today, the majority of healthcare facilities are incorporating osteopathic medicine. Additionally, several osteopathic treatments are being used more often in some healthcare settings, particularly primary care. [3]. As a result, the objective of this review article is to inform readers about osteopathic medicine, including its definition and application. According to osteopathic principles, the body is a single, functional entity. The four osteopathic tenets of medicine encapsulate the objective of osteopathic medicine, which is to assist and support self-healing. These are the four guiding principles of osteopathy: The body, which consists of the body, mind, and soul, is a single entity; (ii) The body has the ability to regulate itself, heal itself, and maintain its health; (iii) Function and structure are interconnected; and (iv) Rational treatment is based on the understanding and application of principles one through three. The osteopathic method heavily emphasises listening to the patient and their body. The additional education provided at osteopathic institutions provides the understanding of somatic dysfunction and the skill of physical

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Received: 2 November, 2022, Manuscript No. PULCRIM-22- 5559 ; Editor assigned:4 November 2022, Pre-QC No. PULCRIM-22- 5559 (PQ); Reviewed: 8 November 2022, QC No. PULCRIM-22- 5559 (Q); Revised: 18 November 2022; Manuscript No. PULCRIM-22- 5559 (R); Published:25 November 2022, DOI: 10.37532.pulcrim.22.7 (6).19-21



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diagnosis, which are necessary in order to "listen" to the patient's body. In this way, osteopathic training equips a doctor with improved dynamic active listening abilities at the start of their medical career. Osteopathic manipulative treatments (OMTs) and the use of compassion and care to treat the patient as a whole and not just the damaged organ are extra learning components for osteopaths, who are trained similarly to allopathic doctors. Osteopathic medicine employs a variety of methods to treat various dysfunctions and illnesses.

OSTEOPATHY TREATMENTS

According to the osteopathic principles previously described, the autonomic nervous system, which can be impacted by somatic dysfunction, is part of the body as a whole. OMTs are a set of manual treatments that enhance physiologic function and support homeostasis in the skeletal, arthroal, and myofascial structures of the body. Both osteopathic (DO) and allopathic (MD) physicians participate in the same medical school courses and residency programmes and can specialise within any field of medicine, but only DOs are specifically trained in their administration [4].

1. **Muscle Energy Technique:** To focus on the diagnosis, osteopathic medicine uses a variety of treatment techniques. Depending on a number of variables, including the patient's age, the severity of the condition, the patient's and/or doctor's size, the environment, etc., a single diagnosis can be treated in a variety of methods. Muscle energy technique is a common form of treatment. The patient is placed into his or her barrier or restrictive motion as part of this direct and active approach, which is described in more detail below. Dr. Fred Mitchell Sr. developed the muscle energy technique in 1948. Stretching tight muscles, releasing tension, reducing pain, and enhancing circulation and lymphatic flow throughout the body are the main goals of this therapy.

Contraindications to muscle energy may include if the patient has had a recent surgery, has compromised strength, has a fracture or open wound on the area requiring treatment, or has chronic joint disease.

2. **Myofascial Release Technique :** Myofascial release (MFR) is a passive technique that either directly or indirectly manipulates the body's fascia to free up constricting tissues and direct the body's natural healing and wellness processes [5]. Chronic low back pain is one of the main ailments that MFR is used to treat, although other pathologies such as musculoskeletal, peripheral nerve, and tendon disorders have also been treated. The MFR method focuses on the myofascial, which surrounds and supports the lymphatic and vascular systems in addition to supporting the bones, muscles, tendons, organs, and connective tissue that run throughout the entire body. The body's collagenous tissue is stretched out to provide stability, but it is also sufficiently elastic to maintain the tissues' pliability. You can think of fascia as a single, continuous strip of tissue that connects the many body sections. A dysfunction somewhere in the fascia can be detrimental to other components of the internal body systems.
3. **Balanced Ligamentous Tension Technique :** For

ligamentous joints such as the pelvis, innominate, shoulder, knee, elbows, etc., balanced ligamentous tension (BLT) is an indirect, passive approach. BLT indications are based on a minimum of two T.A.R.T. findings, just like any other osteopathic procedure, following a thorough patient history and physical examination. Fractures, cancers, and patient resistance are BLT contraindications. Additionally, the BLT's administration skills rely on the doctor's ability to palpate and detect tissue changes. In a nutshell, the BLT approach calls for the use of either a short or long lever to compress joints [6]. A long lever applies compression over a greater distance than a short lever, which applies compression over a smaller distance.

4. **Diaphragm Treatment Technique:** The diaphragms in humans are composed of five connective tissue structures that are distributed throughout the body in a transverse pattern. The tongue, upper thoracic diaphragm, respiratory diaphragm, and pelvic diaphragm are the five diaphragms mentioned above. Our body depends on these structures to sustain homeostasis and proper operation. As a result, the diaphragms help us to regulate and synchronise the pressures inside our cavities. The diaphragms also aid in the regulation of blood flow inside the various cavities and the visceral parenchyma's interstitial space.
5. **Rib Raising Technique:** Numerous patients can benefit from the osteopathic technique of rib elevating, especially those with abnormalities of the sympathetic nervous system. Recent fractures, patient rejection or lack of consent, bone cancer or infection, and other pertinent factors given the clinical setting are all possible contraindications to rib elevation. The sympathetic chain ganglia, which run parallel to the thoracic spine, are the focus of the rib raising technique, and it is believed that stimulating this chain will aid in bringing the autonomic nervous system into balance.
6. **Lymphatic Pumping Technique:** The most thoroughly researched OMT, the lymphatic pumping technique (LPT), has shown a lot of promise for boosting the immune system's ability to fight off microbial infections. In fact, the lymphatic system is an essential part of the body's homeostasis and immune responses [7]. The lymphatic system, in short, consists of lymphatic veins, cilia, and lymph nodes/organs that cooperate to absorb interstitial fluid, move lymph, and boost immune response. Furthermore, osmotically active proteins, parenchymal cell products, inflammatory mediators, immune cells, proteins, apoptotic cells, antigens, and infectious organisms are all transported by lymphatic capillaries when they take up extra interstitial fluid for transport. These substances are then processed by lymph nodes. Extrinsic and intrinsic forces are used to move the lymphatic fluid through the channels. At rest, skeletal muscle contractions cause the lymphatic vessels in the lower extremities to constrict by about one-third (extrinsic), while vigorous smooth muscle pumping causes the lymphatic vessels to constrict by about two-thirds (intrinsic) [8]. At rest, the lymphatic fluid travels through the body at a rate of around 125 mL/h, but

during exercise, this rate can rise by a factor of 10 [9]. The body's homeostasis can be affected by a variety of issues with this system, including valve failure (valves usually prevent lymph from flowing backward), fluid overload, the inability to contract muscles, injury to lymphatic veins or nodes following radiation or surgery, etc. Edema, inflammatory mediator buildup, tissue damage, impaired immunological function, and a number of other disease conditions can result from lymphatic system failure [10]. Anuresis and/or kidney failure, advanced heart failure, severe asthma, unstable cardiac disorders, and acute fractures in the treatment region are possible contraindications to lymphatic therapy.

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